HL/SL COURSE DESCRIPTIONS

Group 1: Language A

In the language A: literature course, students will learn about the various manifestations of literature as a powerful mode of writing across cultures and throughout history. They will explore and develop an understanding of global issues and of factors that contribute to the production and reception of literature, such as:

- the creativity of writers and readers
- the nature of the interaction with the writers' and readers' respective contexts and with literary tradition
- the ways in which language can give rise to meaning and/or effect
- the performative and transformative potential of literary creation and response.

Through close analysis of literary texts in a number of forms and from different times and places, students will consider their own interpretations, as well as the critical perspectives of others. In turn, this will encourage the exploration of how viewpoints are shaped by cultural belief systems and how meanings are negotiated within them. Students will be involved in processes of critical response and creative production, which will help shape their awareness of how texts work to influence the reader and how readers open up the possibilities of texts. With its focus on literature, this course is particularly concerned with developing sensitivity to aesthetic uses of language and empowering students to consider the ways in which literature represents and constructs the world and social and cultural identities.

The model for language A: literature is the same at SL and HL but there are significant quantitative and qualitative differences between the levels. SL students are required to study 9 works, while HL students are required to study 13.

In addition, HL students will have an extra assessment component, the higher level (HL) essay, a written coursework task that requires students to explore a line of inquiry in relation to a studied literary text or work. The outcome is an essay of 1,200–1,500 words in which HL students are expected to demonstrate a deeper understanding of the nature of literary study.

Group 2: Language B: FRENCH OR SPANISH

The distinction between language B SL and HL is demonstrated in the level of competency the student is expected to develop in the **receptive, productive and interactive skills.**
HL students are expected to extend the **range and complexity of the language** they use in order to communicate.

- The study **of two literary works** originally written in the target language is a requirement for HL students only. The literary works are used to expand vocabulary, discuss themes, plots and characters. Literary analysis is NOT the objective.
- Paper 1, **Productive Skills (writing**): The word count for HL students is 450-600 words. The student is required to use more complex language and structures, as well as higher thinking skills such as analysis, evaluation, synthesis and interpretation.
- Paper 2, **Receptive Skills (listening and reading**): There is NO difference in the content of this exam, other than level of difficulty. Both HL and SL students will have 3 audio passages and 3 written passages.
- **Interactive Skills: Individual Oral**: The HL student has 20 minutes of preparation and 15 minutes of speaking. The HL oral is based on an excerpt of approximately 300 words from one of the literary works studied in class. The SL oral is based on one of two images presented to the student upon arrival, with 15 minutes of preparation.
- HL has mandatory summer reading of literary works.

Group 3: IB History

Activities such as open discussion, historical debate, document analysis, and independent research will be used to encourage an in-depth understanding of people in their time develop critical thinking and writing skills. The SL and HL History courses are taught separately. HL would cover the same content as SL with the three additional units on the History of the Americas. The major difference comes in the additional examination, Paper 3, that the HL students sit for and the changes in the percentages that make up the overall IB mark earned. The breakdown is below.

Higher Level	Standard Level
Internal Assessment – 20%	Internal Assessment – 25%
Paper 1- 20%	Paper 1- 30%
Paper 2- 25%	Paper 2- 45%
Paper 3- 35%	Paper 3- NONE

The HL and SL courses BOTH cover the following paper 1 and paper 2 topics:
Paper 1: The Move to Global War (WWII)
Paper 2: The Rise of Authoritarian States AND Causes and Effects of 20th Century Wars

HL ONLY:
Paper 3:
The Great Depression and the Americas
WWII and the Americas
The Cold War and the Americas

Group 4: Sciences

IB Biology: HL/ SL

Biology students at both Standard and Higher Level undertake a common core syllabus, a common internal assessment scheme and have some overlapping elements in the options studied.

They are presented with a syllabus that encourages the development of certain skills, attributes and attitudes. While the skills and activities of Group 4 (science) subjects are common to students at both SL and HL, students at HL are required to study some topics ***in greater depth***, to study ***additional topics*** and to study extension material of a more demanding nature in the common options. The distinction between SL and HL is one of both breadth and depth. Below you will find a breakdown of topics discussed in each class. Note that both classes are taught in a two-year period. Therefore, the pace of the HL class is significantly faster than the SL class.

Core topics	SL	HL
Cell Biology	•	•
Molecular biology	•	•
Genetics	•	•
Ecology	•	•
Evolution and biodiversity	•	•
Human physiology	•	•
Option C: Ecology and conservation	•	•
Additional Higher Level material		
Nucleic acids		•
Metabolism, call respiration, photosynthesis		•
Plant biology		•
Genetics and evolution		•
Animal physiology		•
Practical scheme of work		
Required lab practical (Additional for HL)	•	•
Internal assessment	•	•

Chemistry: only offered as an SL course
Chemistry is an experimental science that combines academic study with the acquisition of practical (hands-on) investigative skills. It is called the central science because chemical principles underpin both the physical environment in which we live and all biological systems. Apart from being a subject worthy of study in its own right, chemistry is a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science, serves as useful preparation for employment, and develops analytical skills. Students considering careers in the sciences, medical or engineering are encouraged to consider chemistry as their sixth subject.

Physics: HL/SL
SL and HL describe the breadth and depth of your student's study of college level physics; furthermore, it determines what they are accountable for when they take their IB exams in their senior year. Students of both levels must learn the eight Core topics and one of the Options. These topics range from classical mechanics and electromagnetism to modern particle physics. SL IB Physics students are only accountable for the Core and the Option. Through a study of the Core topics, SL students will have encountered almost every area of physics. They are more than prepared for introductory physics classes at the college level!

An HL student is responsible for the Core topics and one Option topic, but also four Additional Higher Level topics and more sections within the chosen Option topic. These AHL topics serve as major extensions of the Core curriculum and aim to provide a more complete understanding of the phenomena presented in the Core topics. A successful HL student's knowledge of physics can only be improved by specialized physics courses at the college level!

Below is an outline of the covered topics. The AHL extension is placed next to the corresponding core topic.

SL and HL (Core Topics)	HL Only (Additional Higher Level)
Topic 1: Measurements and Uncertainties	
Topic 2: Mechanics	
Topic 3: Thermal Physics	
Topic 4: Waves	Topic 9: Wave Phenomena
Topic 5: Electricity and Magnetism	Topic 11: Electromagnetic Induction
Topic 6: Circular Motion and Gravitation	Topic 10: Fields
Topic 7: Atomic, Nuclear, and Particle Physics	Topic 12: Quantum and Nuclear Physics
Topic 8: Energy Production	
Options: Relativity, Engineering Physics, Imaging, or Astrophysics	Additional sections within the chosen Option.

Both SL and HL are rigorous and dense; topics that seemed like a breeze in physics honors will now become complex, multilayered studies. The chief difference between SL and HL is the amount of material. Both classes are taught over the time span of two years, but significantly more must be covered in HL. There is no sugar coating here. My SL/HL recommendation is an honest evaluation of a student's readiness. But a student must have the *commitment* to succeed in IB Physics at either level, not just the ability. I ask that you and your student are honest with yourselves about taking IB Physics. I cannot promise an easy journey, but instead a challenging and ultimately rewarding one. I hope to see your student in IB Physics, ready to succeed!

Group 5: Mathematics

Applications and Interpretation SL

This course recognizes the increasing role that mathematics and technology play in a diverse range of fields in a data-rich world. As such, it emphasizes the meaning of mathematics in context by focusing on topics that are often used as applications or in mathematical modeling. To give this understanding a firm base, this course also includes topics that are traditionally part of a pre-university mathematics course such as calculus and statistics.

The course makes extensive use of technology to allow students to explore and construct mathematical models. Mathematics: applications and interpretation will develop mathematical thinking, often in the context of a practical problem and using technology to justify conjectures.

Students who choose Mathematics: applications and interpretation at SL or HL should enjoy seeing mathematics used in real-world contexts and to solve real-world problems.

SL Topics
Topic 1: Number and Algebra • Modeling real-life situations with the structure of arithmetic and geometric sequences and series allows for prediction, analysis and interpretation. • Different representations of numbers enable quantities to be compared and used for computational purposes with ease and accuracy. • Numbers and formulae can appear in different, but equivalent forms, or representations, which can help us to establish identities. • Formulae are a generalization made on the basis of specific examples, which can then be extended to new examples

- Mathematical financial models such as compounded growth allow computation, evaluation and interpretation of debt and investment both approximately and accurately.
- Approximation of numbers adds uncertainty or inaccuracy to calculations, leading to potential errors but can be useful when handling extremely large or small quantities.
- Quantities and values can be used to describe key features and behaviors of functions and models, including quadratic functions.

Topic 2: Functions

- Different representations of functions, symbolically and visually as graphs, equations and tables provide different ways to communicate mathematical relationships.
- The parameters in a function or equation may correspond to notable geometrical features of a graph and can represent physical quantities in spatial dimensions.
- Moving between different forms to represent functions allows for deeper understanding and provides different approaches to problem solving.
- Our spatial frame of reference affects the visible part of a function and by changing this "window" can show more or less of the function to best suit our needs.
- Changing the parameters of a trigonometric function changes the position, orientation and shape of the corresponding graph.
- Different representations facilitate modeling and interpretation of physical, social, economic and mathematical phenomena, which support solving real-life problems.
- Technology plays a key role in allowing humans to represent the real world as a model and to quantify the appropriateness of the model.

Topic 3: Geometry and Trigonometry

- The properties of shapes are highly dependent on the dimension they occupy in space.
- Volume and surface area of shapes are determined by formulae, or general mathematical relationships or rules expressed using symbols or variables.
- The relationships between the length of the sides and the size of the angles in a triangle can be used to solve many problems involving position, distance, angles and area.
- Different representations of trigonometric expressions help to simplify calculations.
- Systems of equations often, but not always, lead to intersection points.
- In two dimensions, the Voronoi diagram allows us to navigate, path-find or establish an optimum position.

Topic 4: Statistics and Probability

- Organizing, representing, analyzing and interpreting data, and utilizing different statistical tools facilitates prediction and drawing of conclusions.
- Different statistical techniques require justification and the identification of their limitations and validity.
- Approximation in data can approach the truth but may not always achieve it.
- Correlation and regression are powerful tools for identifying patterns and equivalence of systems.
- Modeling and finding structure in seemingly random events facilitates prediction.
- Different probability distributions provide a representation of the relationship between the theory and reality, allowing us to make predictions about what might happen.

Topic 5: Calculus

- Students will understand the links between the derivative and the rate of change and interpret the meaning of this in context.
- Students will understand the relationship between the integral and area and interpret the meaning of this in context.
- Finding patterns in the derivatives of polynomials and their behavior, such as increasing or decreasing, allows a deeper appreciation of the properties of the function at any given point or instant.
- Calculus is a concise form of communication used to approximate nature.
- Numerical integration can be used to approximate areas in the physical world.

- Optimization of a function allows us to find the largest or smallest value that a function can take in general and can be applied to a specific set of conditions to solve problems.
- Maximum and minimum points help to solve optimization problems.
- The area under a function on a graph has a meaning and has applications in space and time.

Assessment: SL Students: Paper 1 (No Calculator): 40%
Paper 2 (Calculator): 40%
Internal Assessment: 20%

Analysis and Approaches:

This course recognizes the need for analytical expertise in a world where innovation is increasingly dependent on a deep understanding of mathematics. This course includes topics that are both traditionally part of a pre-university mathematics course (for example, functions, trigonometry, calculus) as well as topics that are amenable to investigation, conjecture and proof, for instance the study of sequences and series at both SL and HL, and proof by induction at HL.

The course allows the use of technology, as fluency in relevant mathematical software and hand-held technology is important regardless of choice of course. However, Mathematics: analysis and approaches has a strong emphasis on the ability to construct, communicate and justify correct mathematical arguments.

Distinction between SL and HL

Students who choose Mathematics: analysis and approaches at SL or HL should be comfortable in the manipulation of algebraic expressions and enjoy the recognition of patterns and understand the mathematical generalization of these patterns. Students who wish to take Mathematics: analysis and approaches at higher level will have strong algebraic skills and the ability to understand simple proof. They will be students who enjoy spending time with problems and get pleasure and satisfaction from solving challenging problems.

SL and HL (Core Topics)	HL Only
Topic 1: Number and Algebra • Modelling real-life situations with the structure of arithmetic and geometric sequences and series allows for prediction, analysis and interpretation. • Different representations of numbers enable equivalent quantities to be compared and used in calculations with ease to an appropriate degree of accuracy. • Numbers and formulae can appear in different, but equivalent, forms, or representations, which can help us to establish identities. • Formulae are a generalization made on the basis of specific examples, which can then be extended to new examples. • Logarithm laws provide the means to find inverses of exponential functions which model real-life situations. • Patterns in numbers inform the development of algebraic tools that can be applied to find unknowns. • The binomial theorem is a generalization which provides an efficient method for expanding binomial expressions.	• Proof serves to validate mathematical formulae and the equivalence of identities. • Representing partial fractions and complex numbers in different forms allows us to easily carry out seemingly difficult calculations. • The solution for systems of equations can be carried out by a variety of equivalent algebraic and graphical methods.

Topic 2: Functions • Different representations of functions, symbolically and visually as graphs, equations and tables provide different ways to communicate mathematical relationships. • The parameters in a function or equation correspond to geometrical features of a graph and can represent physical quantities in spatial dimensions. • Moving between different forms to represent functions allows for deeper understanding and provides different approaches to problem solving. • Our spatial frame of reference affects the visible part of a function and by changing this "window" can show more or less of the function to best suit our needs. • Equivalent representations of quadratic functions can reveal different characteristics of the same relationship. • Functions represent mappings that assign to each value of the independent variable (input) one and only one dependent variable (output).	• Extending results from a specific case to a general form can allow us to apply them to a larger system. • Patterns can be identified in behaviors which can give us insight into appropriate strategies to model or solve them. • The intersection of a system of equations may be represented graphically and algebraically and represents the solution that satisfies the equations.
Topic 3: Geometry and Trigonometry • The properties of shapes depend on the dimension they occupy in space. • Volume and surface area of shapes are determined by formulae, or general mathematical relationships or rules expressed using symbols or variables. • The relationships between the length of the sides and the size of the angles in a triangle can be used to solve many problems involving position, distance, angles and area. • Equivalent measurement systems, such as degrees and radians, can be used for angles to facilitate ease of calculation. • Different representations of the values of trigonometric relationships, such as exact or approximate, may not be equivalent to one another. • The trigonometric functions of angles may be defined on the unit circle, which can visually and algebraically represent the periodic or symmetric nature of their values.	• Position and movement can be modelled in three-dimensional space using vectors. • The relationships between algebraic, geometric and vector methods can help us to solve problems and quantify those positions and movements.
Topic 4: Statistics and Probability • Organizing, representing, analyzing and interpreting data and utilizing different statistical tools facilitates prediction and drawing of conclusions. • Different statistical techniques require justification and the identification of their limitations and validity. • Approximation in data can approach the truth but may not always achieve it. • Some techniques of statistical analysis, such as regression, standardization or formulae, can be applied in a practical context to apply to general cases.	• Properties of probability density functions can be used to identify measure of central tendency such as mean, mode and median. • Probability methods such as Bayes theorem can be applied to real-world systems, such as medical studies or economics, to inform decisions and to better understand outcomes.

• Modelling through statistics can be reliable, but may have limitations.	
Topic 5: Calculus • The derivative may be represented physically as a rate of change and geometrically as the gradient or slope function. • Areas under curves can be can be approximated by the sum of the areas of rectangles which may be calculated even more accurately using integration. • Examining rates of change close to turning points helps to identify intervals where the function increases/decreases, and identify the concavity of the function. • Numerical integration can be used to approximate areas in the physical world. • Mathematical modelling can provide effective solutions to real-life problems in optimization by maximizing or minimizing a quantity, such as cost or profit. • Derivatives and integrals describe real-world kinematics problems in two and three-dimensional space by examining displacement, velocity and acceleration.	• Some functions may be continuous everywhere but not differentiable everywhere. • A finite number of terms of an infinite series can be a general approximation of a function over a limited domain. • Limits describe the output of a function as the input approaches a certain value and can represent convergence and divergence. • Examining limits of functions at a point can help determine continuity and differentiability at a point.

Assessment:	SL Students:	Paper 1 (No Calculator):		40%
		Paper 2 (Calculator):	40%	
		Internal Assessment:	20%	
	HL Students:	Paper 1 (No Calculator):		30%
		Paper 2 (Calculator):	30%	
		Paper 3 (Calculator):	20%	
		Internal Assessment:	20%	

SPHS IB 6th Subjects:

Information Technology in a Global Society (ITGS)

This is NOT a technology course. No prior knowledge of computers or programming is required.

With new technologies emerging every day, it is important to understand how it will impact us. The ITGS course focuses on technology that is used every day and how affects people. We look at how it impacts business, the environment, and education. We discuss the ethical concerns that arise. We look at technology and ask, "Should we?". This course strives to answer the big questions relating to technology and look for solutions to problems that it causes.

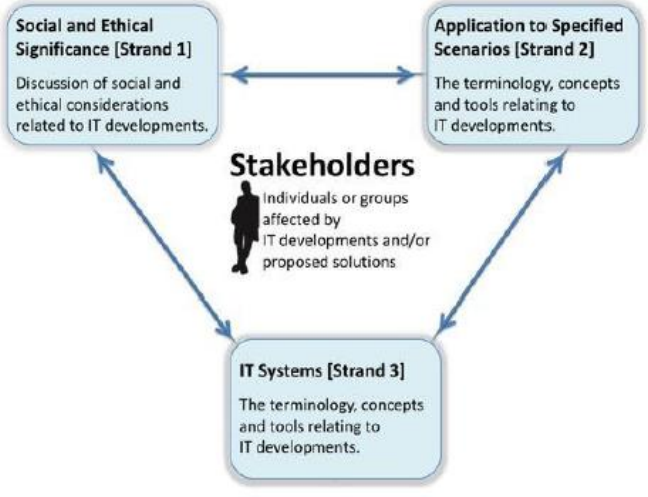
We will cover the following topics:

- Healthcare Industry (Robotic Doctors, Artificial Intelligence, Diagnostics)
- Environmental Impact (Simulations, eWaste, Satellites)
- Home & Leisure (Smart Speakers, Video Games, Digital Films)

- Politics and Government (Fake News, Social Media, Censorship, Surveillance)
- Education & Training (Cell Phones, Distance Learning, Accessibility for Disabilities)
- Business & Employment (eCommerce, Teleworking, Self-Driving Cars)

Differences between Higher Level & Standard Level

- SL and HL students will take Paper 1 and Paper 2.
- HL Students will have an additional section on Paper 1.
- HL students will complete a 3rd Paper examination that is based on a case study. The case study will be reviewed prior to the exam.



IB Music

Students will work on their musicianship in 3 primary roles: Researcher, Creator, and Performer. Students will work on listening skills, performance proficiency, compositional craft, the ability to discuss music critically, the ability to justify creative choices, and their capacity for entrepreneurship in the musical world.

This course is only offered as an SL option. Students who cannot read music are strongly discouraged from registering for this course.

NB: There is no external exam for this course.

Assessment	Percentage
Exploring Music • Portfolio demonstrating research from all 3 roles	30% (External)
Experimenting with Music • Demonstrate experimentation as creator and performer	30% (Internal)
Presenting Music • Collection of work presenting music as researcher, performer and creator	40% (External)

IB Psychology

Psychology is the course where you learn how to live. Psychology applies to all aspects of our lives, such as taking care of our health, raising children, developing empathy for the mentally ill, understanding the behavior of family and friends, learning about the views of other cultures, getting the edge as an athlete, and preparing for careers in medicine, law, education, and business. In the words of psychologist Daniel Goldstein, "Psychology, unlike chemistry, unlike algebra, unlike literature, is an owner's manual for your own mind. It's a guide to life. What could be more important than grounding young people in the scientific information that they need to live happy, healthy, productive lives? To have good relationships?

The course has many benefits including understanding yourself, complimenting other courses, managing stress, and having a track record of excellent IB exam performance. HL and SL students are in the same class. The difference between the levels is reflected in the External Assessments, with HL students writing for an additional hour on Paper 2 and also writing a Paper 3.

Course topics include:

* Brain, hormones, and genetics
* Memory theories and phenomena
* Thinking and decision making
* Emotion
* Social identity
* Conformity and obedience
* Culture
* Stereotypes
* Abnormal behavior and its treatment
* Health problems
* Health promotion
* Psychological research methods
* Ethics in psychological research

Differences between SL and HL:

The difference between SL and HL is the amount of work. The standards are the same.
SL and HL students both have the same core study of Biological, Cognitive, and Sociocultural Approaches to Behavior. Each of the three core approaches contains an additional extension topic for HL students only. The extension topics are the role of animal research in understanding human behavior, cognitive processing in the digital world, and the influence of globalization on individual attitudes, identities, and behavior.

For the Internal Assessment, both SL and HL students work together in small groups to conduct an actual psychology experiment which they then write up as if it were to be published in an academic journal.

SL students prepare one option topic, meaning one area of psychology selected to study in depth, while HL students prepare two options. Health Psychology and Abnormal Psychology are the current options for SPHS students.

Additionally, HL students only have a Paper 3, which assesses students' knowledge of psychological research methodology.

IB Theater

The IB (International Baccalaureate) Diploma Programme Theatre course is a multifaceted theatre-making course of study. It gives students the opportunity to make theatre as creators, designers, directors and performers. It emphasizes the importance of working both individually and collaboratively as part of an ensemble. It offers the opportunity to engage actively in the creative process, transforming ideas into action as inquisitive and productive artists.

The aims of the St. Petersburg High School IB Theatre Programme are to help students to understand the joy, nature, and need of theatre in the present; to understand it through practical experience as well as its historical context; to understand a variety of cultures other than their own, and how globally they are connected. Through this, students will develop better concepts about self, human relationships, and the world. The IB Theatre student will be able to function at a higher level in the world through better interpersonal communication skills, and through greater respect for global differences as he or she experiences challenges in everyday living.

The IB Theatre Programme consists of Theatre in Context, Theatre in Processes, and Presentation Theatre. There are four second year assessments: Solo Theatre Project, Director's Notebook, Research Presentation, and Collaborative Theatre Project.

External assessment tasks	SL	HL
Task 1: Solo theatre piece (HL only) • Students at HL research a theatre theorist they have not previously studied, identify an aspect(s) of their theory and create and present a solo theatre piece (4–8 minutes) based on this aspect(s) of theory.	N/A	35%
Task 2: Director's notebook (SL and HL) • Students at SL and HL choose a published play text they have not previously studied and develop ideas regarding how it could be staged for an audience.	35%	20%
Task 3: Research presentation (SL and HL) • Students at SL and HL plan and deliver an individual presentation (15 minutes maximum) to their peers in which they outline and physically demonstrate their research into a convention of a theatre tradition they have not previously studied.	30%	20%

Internal assessment task	SL	HL
Task 4: Collaborative project (SL and HL) • Students at SL and HL collaboratively create and present an original piece of theatre (lasting 13–15 minutes) for and to a specified target audience, created from a starting point of their choice.	35%	25%

IB Core: Theory of Knowledge (REQUIRED)

This 2-year course incorporates both the formal Theory of Knowledge curriculum required for all DP students as well as instruction and support on the Extended Essay and CAS.

The Theory of Knowledge (TOK) course encourages students to: **Think** about the nature of knowledge, **reflect** on the process of learning in all the subjects, and make **connections** across subject areas.

The philosophy behind TOK is that learning is connected, related, and does not exist in silos. A goal of TOK is that when we're done you'll see that all of the subject areas (the **Areas of Knowledge** or AoKs) and the **Ways of Knowing** (WoKs) are interrelated.

The fundamental question of TOK is "**how do we know that?**"

IB states that the specific aims of TOK are:

1. Make connections between a critical approach to the construction of knowledge, the academic disciplines and the wider world
2. Develop an awareness of how individuals and communities construct knowledge and how this is critically examined
3. Develop an interest in the diversity and richness of cultural perspectives and an awareness of personal and ideological assumptions
4. Critically reflect on their own beliefs and assumptions, leading to more thoughtful, responsible and purposeful lives
5. Understand that knowledge brings responsibility which leads to commitment and action.

Major assignments related to CAS and the EE will occur throughout the Junior year, including:

- **CAS Plan** – covers the entirety of CAS over 18 months
- **Extended Essay Research Assignment** – Students develop the necessary research skills and begin outlining and developing knowledge on their EE subject/topic
- **Reflective Writing** assignments on content area
- Formative assessments on CAS/EE requirements and expectations